Algún indefinite is not bound by adverbs of quantification*

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Abstract

Some indefinites cannot be bound by adverbs of quantification or the generic operator. I argue that this datum follows from the internal syntax of indefinites: only those indefinites consisting of a minimal structure can be bound, bigger indefinites cannot. I present evidence from Spanish, Russian and English to support this claim. Two theoretical consequences follow. The first one is about wh-dependencies: I argue that wh-phrases cannot be regarded as noun phrases with an extra [wh] feature, but rather as very small indefinites without additional features. The second one involves exceptional scope: choice function approaches seem to run into a paradox that alternative approaches, such as Schwarszchild's Singleton Indefinite approach, avoid. I also argue that an alternative semantic approach to binding resistance yields no fruit. Finally, I show that only small indefinites can be used as predicates, thus bolstering the approach taken in these pages.

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1. Binding and the structure of the indefinite noun phrase

Lewis (1975) pointed out that indefinite noun phrases can be bound by some sentential adverbs of quantification. (1b) is a possible Logical Form (henceforth LF) for (1a).

(1)   a.   A bad pianist always plays too fast.
        b.   always(x) [x a bad pianist] x plays too fast

Additionally, singular indefinites can be interpreted as bound by an abstract generic quantifier. (2a) can have a LF as in (2b):[1]

(2)   a.   A bad pianist plays too fast.
        b.   GEN(x) [x a bad pianist] x plays too hard

(Henceforth, I refer to adverbs of quantification using the acronym AoQ. Additionally, when I want to refer to adverbs of quantification and the generic operator together I use the term AoQG.)

Heim (1982) and Kamp (1981) developed a theory of indefinite noun phrases according to which indefinite noun phrases are variables without a quantificational force of their own. This is reflected in (1b) and (2b), where the semantic structure of 'a bad pianist' is simply 'λx bad-pianist(x)'.

In Spanish, singular indefinites may show up in two shapes: as derived from the base *un-* or from the base *algun-*. The base can then be modified with the feminine gender desinence *-a*, yielding *un-una* and *algún-alguna*. Interestingly,

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[1]   The view that AoQ truly bind the variable of an indefinite noun phrase has been debated, and sometimes it has been proposed that it is a mirage, a reflex of binding of the event variable by the AoQ. However, Dobrovie-Sorin and Beyssade (2012: 191-220) discuss this issue in some detail and show empirical evidence that AoQ do indeed bind indefinite variables. For an updated view on AoQ see Rooth (2019).
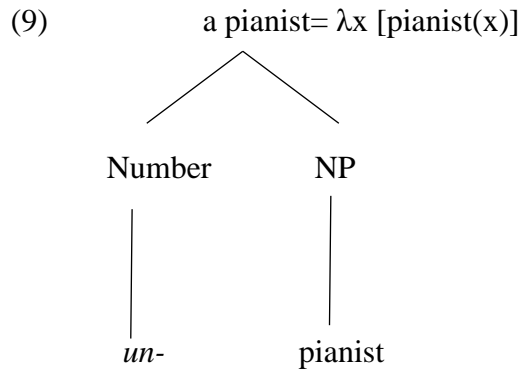
only *un-* accepts binding by AoQG. *Algun-* rejects it. Sentences (5) and (6) are grammatical with an existential meaning:

(3)   a.   Un mal pianista toca demasiado rápido
             '*un* bad pianist plays too fast.'
       b.   GEN(x) [x a bad pianist] x plays too fast

(4)   a.   Un mal pianista siempre toca demasiado rápido.
             '*un* bad pianist always plays too fast.'
       b.   always(x) [x a bad pianist] x plays too fast

(5)   a.   Algún mal pianista toca demasiado rápido
             '*algun* bad pianist plays too fast.'
       b.   * GEN(x) [x a bad pianist] x plays too fast

(6)   a.   Algún mal pianista siempre toca demasiado rápido.
             '*algun* bad pianist always plays too fast.'
       b.   * always(x) [x a bad pianist] x plays too fast

As is traditional, I take it that (1b), (2b), (3b) and (4b) are possible because 'a' indefinites are (or can be) variables, therefore free to be bound by a higher quantifier, as argued by Heim and Kamp. The unacceptability of (5b) and (6b) as possible LFs for (5a) and (6a) then should lead to the opposite conclusion, that *algun-* indefinites are not variables but Quantifier Noun Phrases (QNPs). The difference between the two types of indefinites is shown in (7) and (8):

(7)   [| *un-* bad pianist |] = λx [bad-pianist(x)]
(8)   [| *algun-* bad pianist |] = ∃x [bad-pianist(x)]

If the hypothesis represented in (7) and (8) is correct, one would expect to find this structural difference to be visible, at least some of the time. Thus, I hypothesize that *algun-* indefinites and *un-* indefinites have different internal syntax. For *un-* indefinites I maintain the Heim-Kamp-Kratzer-Diesing approach for indefinites in the sense that they do not include an existential quantifier. I take it that *un-* indefinites consist of a NP selected by the functional head Number, as in the now traditional approach of Ritter (1993). Additionally, I take it that the NP denotes a kind and Number shifts the NP to the type of predicate (see in particular Déprez 2005).

(9)   a pianist= λx [pianist(x)]

```
              Number        NP
                |            |
                |            |
               un-         pianist
```

There are by now numerous analyses on the functional structure that lies between the noun and the completed DP or QNP (see Borer 2005, Ihsane 2008, Klockman 2020, Zamparelli 2000, among others.) What I label here as Number stands for a number of grammatical functions in the noun phrase, such as classifier, plurality (for count nouns) and quantity (for mass nouns), which are analyzed in detail in the works mentioned above (see in particular Borer 2005). For our purposes, a broad understanding of the nominal structure is sufficient.

algun- indefinites are QNP, with an existential quantifier as a syntactic head that selects for a smaller phrase, as shown in (9). The existential quantifier spells out as *alg-*.

(10)   QNP = ∃x [pianist(x)]

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          ∃              NumP = λx [pianist(x)]
          |
          |           Number        NP
          |             |            |
         alg-         -un-         pianist
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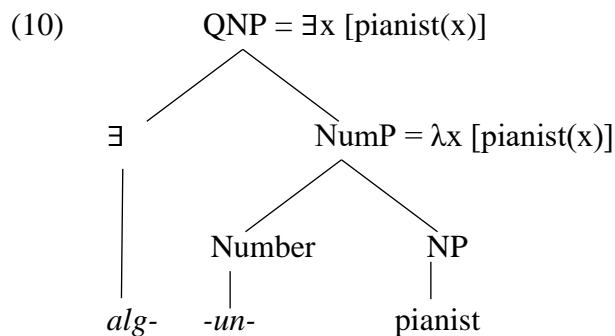
The morphemes *alg-* and *un-* give rise to several types of indefinite determiners and pronouns. A detailed discussion of all of them would take us far afield, but a few words are in order before I proceed. (See also Gutiérrez-Rexach 2003 for a general discussion of indefinites in Spanish.) Here are some examples of indefinite determiners and pronouns in Spanish:

(11)   Unos pianistas tocan demasiado rápido.
        unos pianists play too fast
        'Some pianists play too fast.'

(12)   Algunos pianistas tocan demasiado rápido.
        algunos pianists play too fast
        'Some pianists play too fast.'

(13)   Alguien toca demasiado rápido.
        'Someone plays too fast.'

(14)   Algo se aproxima.
        'Something is getting closer.'

(15)   Aquí   necesitamos   algo de harina.
        here   need.1STPL   *algo* of flour
        'Here we need some flour.'

        The form *unas/os* shown in (11) is discussed in Le Bruyn (2010), where he shows that it is not simply the plural of *un-* because it has distinct semantic properties; Le Bruyn goes onto suggest that *un-* is a full-fledged indefinite article while *unas/os* has properties intermediate between those of an indefinite determiner and a numeral; in particular, *unas/os* has a collective meaning and it is never within the scope of negation while *un-* can be interpreted in the scope of negation.
        The form *algunas/os* exemplified in (12) is also not exactly the plural of *algun-*. First, *algunas/os* has a partitive meaning that *algun-* lacks. Martí (2007) claims that both *unos/as* and *algunos/as* are variables and atributes to the morpheme *alg-* the partitive meaning. However, *alguien* and *algun-* are not partitive; *algo* can be used partitively with an *of* complement and a mass noun. This leads to the conclusion that the partitive meaning cannot be supplied by *alg-* alone; it seems to me that the partitive meaning of *algunas/os* must be the product of the existential quantifier spelled out as *alg-* in conjunction with plurality while in an example like (15) partitivity is explicitly introduced by the preposition *de*.
        A second difference between *algunas/os* and *algun-* is that the former is acceptable with Individual Level predicates (as pointed out by Gutiérrez-Rexach 2003) while the latter is not:

(16)   Algunos estudiantes son abogados.
        algunos students are lawyers

(17) * Algún estudiante es abogado.
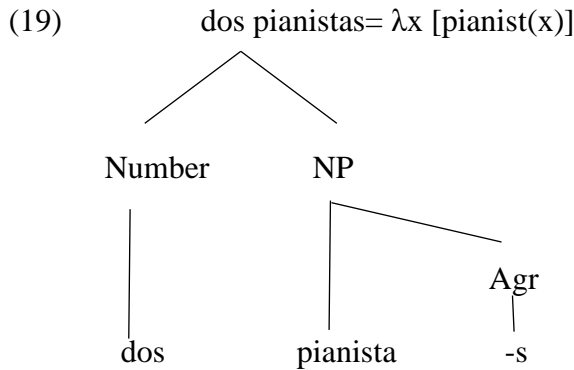   *algún* student is a lawyer

        What all of the *alg-* forms have in common, however, is that they cannot be bound by AoQG. In this paper, I discuss only the singular forms *algun-* and *un-*; (the semantics of *algun-* is discussed in Alonso-Ovalle and Menéndez-Benito 2010, see the brief discussion in section 5).
        Finally, a few words on numerals and other weak indefinites are in order. It seems to me that numerals also can be bound by AoQG. (18a) may mean that when two bad violinists play together the result is that the piece is played too fast. This is shown in (18b). (18c) and (18d) show the numeral noun phrase in a generic sentence:

(18)   a.   Dos malos violinistas normalmente tocan demasiado rápido.
                Two bad violinists usually play too fast.
        b.   usually (x) [two(x) & bad violinist (x)] x plays too fast
        c.   Dos malos violinistas tocan demasiado rápido.
                Two bad violinists play too fast.

d.   GEN(x) [two(x) & bad violinist (x)] x plays too fast

The numeral can be taken to be the head of Number. I assume that the plural morpheme on the noun is the result of concord:[2]

(19)   dos pianistas= λx [pianist(x)]

```
                        /\
                       /  \
              Number      NP
                 |        / \
                 |       /   \
                 |      /    Agr
                 |     /      |
                dos  pianista  -s
```

As for other weak indefinites like *varios* 'several', *unos pocos* 'a few', *muchos* 'many', my own judgments are somewhat wobbly, but I am more inclined to see them as rejecting binding. If so, it may be the case that they instantiate structure (10) rather than (9) (see also footnote 5, which confirms this suggestion).
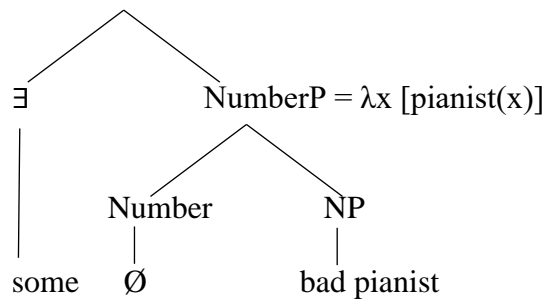
A crucial component of this paper is that the distinction between two types of indefinites defined by the structures in (9) and (10) is not limited to Spanish. Becker (1999) and Farkas (2006) notice a parallel phenomenon for English: While 'a' can be bound by AoQG, 'some' cannot be:

(20)   a.   A bad pianist plays too fast.
        b.   GEN(x) [x a bad pianist] x plays too hard

(21)   a.   A bad pianist always plays too fast.
        b.   always(x) [x a bad pianist] x plays too fast

(22)   a.   Some bad pianist plays too fast.
        b.   * GEN(x) [x a bad pianist] x plays too hard

(23)   a.   Some bad pianist always plays too fast.
        b.   * always(x) [x a bad pianist] x plays too fast

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[2]   There are other types of analyses for this data, the most common being having the numeral in Spec,Num and the suffix *-s* as head of Number. I have two reasons why I choose to have the plural morpheme on the noun as a concord morpheme instead of as head of Number. First, parsimony: *-s* is a plural concord morpheme when attached to adjectives and determiners and therefore it seems preferable to take *-s* to be a concord morpheme across the board. Second, there is the crosslinguistic evidence: in many languages the plural morpheme and the numeral are incompatible (and these are languages that have no concord, as is the case with the Turkic languages). This follows if they occupy the same position as head of Number in these languages. I take it that numerals are always heads of Number while plural morphemes in languages with concord for number are the spell out of concord features.

Becker (1999) and Farkas (2006) provide accounts for the difference between 'some' and 'a' on semantic terms. They are discussed in section 5. Here I propose a syntactic analysis parallel to what I have presented for Spanish *algun-* and *un-*. 'some' indefinites include an existential quantifier and the corresponding syntactic node while 'a' quantifiers include only a Number Phrase. (24) shows the structure of a 'some NP' phrase.

(24)   QNP = ∃x [pianist(x)]

```
              ∃              NumberP = λx [pianist(x)]
              |              ╱              ╲
              |         Number            NP
              |            |               |
            some          Ø           bad pianist
```

And (25) shows the syntax of 'a NP':

(25)   a pianist= λx [pianist(x)]

```
              ╱              ╲
         Number            NP
            |               |
            a             pianist
```
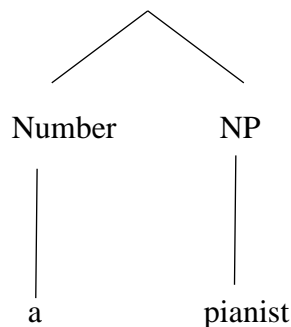
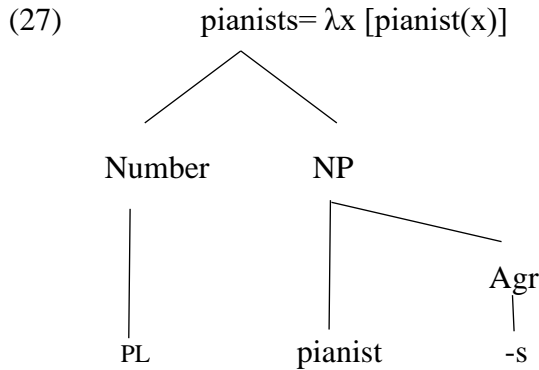## 2. Very small indefinites: bare nouns and wh-determiners

Since bare nouns and wh-determiners are components of very small indefinites I predict that they should be bound by AoQG. This prediction holds, as I show in this section.

English has bare plurals and bare mass nouns. Bare plurals have received a good deal of attention in the syntax-semantics literature since Carlson (1977). Here I take it for granted that bare plurals in English are variables, which accounts for the existential reading as well as the fact that they can be bound by AoQG (see Kratzer 1988, Diesing 1992):[3]

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[3]   Equating bare plurals with indefinite noun phrases encounters a well-known empirical difficulty: bare plurals are always within the scope of negation while indefinite noun phrases can scope outside negation, as shown in (i). (see Carlson 1977 for the original observation and Dayal 2004 for a close discussion of this problem, among others.)

(26)   a.   Bad pianists always play too fast.
        b.   Bad pianists play too fast.

Since bare plurals have no determiner, the datum in (26) corroborates my hypothesis that the variable semantics depends on a small structure. One could suggest a structure like the following:

(27)   pianists= λx [pianist(x)]

```
                      pianists= λx [pianist(x)]
                          /\
                         /  \
                 Number      NP
                   |        /\
                   |       /  \
                   |      /    Agr
                   |     |      |
                  PL   pianist  -s
```

Bare mass nouns also lack a determiner and also are amenable to binding, further confirming the hypothesis that this property correlates with small size:

(28)   a.   Good flour usually rots very fast.
                usually(x) [x is flour] x rots very fast
        b.   Potable water looks clean.
                GEN(x) [x is potable water] x looks clean,

Bare plurals and bare mass nouns in Spanish present a less transparent picture. They are unacceptable in subject position (Contreras 1986) and they always have an existential reading. In order to obtain a generic interpretation, Spanish requires the determiner *l-* (which yields the forms *el, la, los, las* once gender and number are affixed). Quite possibly, we should analyze *l-* as the spell out of two different syntactic terminals, [DEF] and [GEN].

(i)   a.   I didn't hear a bad pianist tonight.
        b.   I didn't hear bad pianists tonight.

However, this datum is not sufficient to posit an essential difference between bare plurals and indefinites. At least some indefinite determiners must also be under the scope of negation, as can be seen in Karimi's (2003:111) discussion of Persian *ye(k)*, Le Bruyn (2010: 73-89) discussion of French *des*, Mathewson (1999:91) on St'at'imcets *ku* and Chung and Ladusaw's (2004: 41) on Maori *he*. If so, then it may make more sense to discuss (i) in terms of properties of sub-types of indefinites rather than as a property that separates indefinites from bare plurals. Thus, one could still maintain that bare plurals in English are indefinite noun phrases and propose that some indefinite noun phrases must be within the scope of negation - while others can be outside, like *a* and yet others must be outside, like *some*).

Some languages also allow for bare singular count nouns. There are some theories of bare singulars in the market (Déprez 2005, Kester and Schmitt 2007, Dayal 2004, see also Dayal and Sağ's 2020 overview). Part of the interest in bare nouns is that they can be interpreted as kinds or as indefinite noun phrases; additionally, in languages lacking a definite determiner, a bare noun can also function as a definite noun phrase. Following in part this literature, I take it that these interpretations correlate with different types of silent syntactic structure: the kind interpretation is the result of projecting a NP while an indefinite interpretation involves a NumberP. As for definite readings, I suggest they might involve a silent definite D (Longobardi 1994).

As an example of a language with bare count nouns I choose Russian, which has the additional advantage of possessing a wide range of indefinite affixes. In Russian, a bare singular noun can also be bound by an AoQG. This suggests that a bare singular is a small indefinite noun phrase without a quantifier:

(29)   Plokhoy pianist vsegda igraet slishkom bystro
         bad   pianist always plays too   fast
         'A bad pianist always plays too fast.'
         LF: always(x) [x a bad pianist] x plays too fast

Consider now wh-determiners. Haspelmath (1997) shows that in many languages indefinite pronouns are built on wh-words, whereas the opposite is never the case. The following is an example, from Russian:

(30)   a.   Kak-oj NP
                which-NOM NP
                'which NP'
        b.   Kak-oj-to NP
                which-NOM-*TO* NP
                'some NP'

This entails that wh-words must be very small indefinites. If wh-words are morpho-syntactically very small indefinites, one should expect that they could be bound by an AoQG. In fact, Berman (1991) points out that wh-phrases can be bound by an AoQ (see also Groenendijk & Stokhof's 1993 discussion):

(31)   a.   The principal usually finds out which students cheated in the exam.
        b.   Usually(x) [x a student that cheats] the principal finds x out

Again, this seems to be a cross-linguistic property. Consider Russian again. In this language, a wh-determiner can be bound by an AoQ, as shown in the following two examples (one plural, one singular). In both examples, (31b) is a possible LF:

(32)   a.   Director   obychno   uznajet   kak-ie   studenty spisyvali
               director   usually   discovers which-NOM.PL students copied
               na ekzamene.
               in exam
               LF: Usually(x) [x a student that copies] the principal finds x out
       b.   Director   obychno   uznajet   kak-oj   student spisyval
               director   usually   discovers which-NOM   student copied
               na eksamene.
               in exam
               LF: Usually(x) [x a student that copies] the principal finds x out

For completeness, I show a relevant Spanish example – which also has the LF in (30b):

(33)   El director normalmente descubre qué estudiantes copiaron en el examen.
       'The director usually discovers which students cheated in the exam.'
   LF: Usually(x) [x a student that copies] the principal finds x out

As mentioned, Russian indefinite determiners are built on top of wh-determiners. Interestingly, indefinite determiners in Russian cannot be bound by AoQG. The following example shows the contrast between *kakoj* above and the indefinite determiners *kakojto*, *kakojnibud'* and *kakojlibo* (see Haspelmath 1997: 272-275 and Geist 2008 for discussions of their semantic properties; a brief discussion is in section 5):

(34)   a.   kak-oj-to/-nibud'-libo   plokh-oj   pianist obychno   igraet
               which-NOM-*to/-nibud'/-libo*   bad-NOM   pianist usually   plays
               slishkom bystro.
               too   fast
               'Some bad pianist usually plays too fast.'
       b. *   usually(x) [x a bad pianist] x plays too fast

Thus, in Russian bare singular noun phrases and wh-phrases can be bound by an AoQG while an indefinite determiner built on the wh-determiner cannot be. This confirms the hypothesis that the AoQG can only bind into small indefinites.
       I would suggest that the suffixes [-to], [-nibud'] and [-libo] spell out existential quantifiers (each of them is additionally associated with other features, as described in Haspelmath 1997.)[4]

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[4]   Since I am not sure what the syntax of *kakoj pianist* should be, I leave it with a non-commital XP in (35). The main difficulty with Russian indefinites is that the indefinite affix is external to the case affix (see 29), which is unexpected according to standard assumptions regarding nominal structure. Fortunately, the exact structure of XP is irrelevant for the purposes of this article.

(35)   QNP = ∃x [pianist(x)]

     ∃   XP = λx [pianist(x)]

     -to   kak(oj)-   pianist
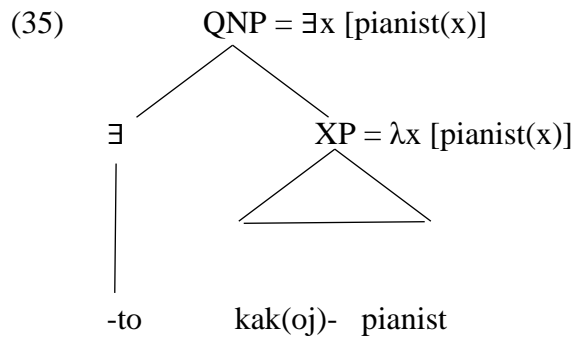
3. Wh-phrases and the syntax of wh-dependencies

As mentioned, Berman (1991) points out that wh-phrases can be bound by an AoQ (see also Groenendijk & Stokhof's 1993 discussion). I repeat the relevant example here for the reader's convenience:

(36)   a.   The principal usually finds out which students cheated in the exam.
     b.   Usually(x) [x a student that cheats] the principal finds x out

     Notice that the wh-phrase in (30) is a declarative complement clause, not an interrogative. When the wh-phrase is an interrogative, it cannot be bound by an AoQG. In the following examples, the AoQG cannot bind the wh-phrase:

(37)   The principal usually wonders which students cheated in the exam.

(38)   Who usually plays too fast?

(39)   Which bad pianist usually plays too fast?

     This seems to be a stumbling block: if an interrogative wh-phrase is a small indefinite, why can't it be bound by an AoQG? The contrast follows if we adopt a suitable syntax for wh-dependencies. In a nut-shell, the solution is to take a wh-dependency to be a simple quantifier-variable dependency. In other words, an interrogative wh-phrase is a version of 'a NP' bound by an existential quantifier incorporated into the interrogative complementizer (call this interrogative complementizer C[Q]) (see Reinhart 1997). It follows from Full Interpretation that a variable cannot be bound by two quantifiers simultaneously. Thus, either a small indefinite is bound by C[Q] or by and AoQG, but not by both at the same time.
     The simple analysis sketched in the previous paragraph conflicts with what contemporary syntactic theory assumes regarding wh-interrogatives. Contemporary syntactic theory takes wh-phrases to be DPs that have an additional feature: the wh-feature, typically assumed to be associated with D:

(40)   wh-phrase: [DP D[wh] … [NP N]]
     regular noun phrase: [DP D … [NP N]]

(Alternatively, the extra component of wh interrogatives is a Q-particle that selects the wh-phrase, as in Hagstrom 1998, Cable 2008).

This wh-feature is what makes a subset of indefinite noun phrases available for a syntactic dependency with a C$_{[Q]}$. I think it is fair to say that every syntactic analysis of wh-dependencies adopts a variant of this assumption (except Richards 2010, 2015). It is central to the checking system of Chomsky (1995) as well as for the probe-goal system of Chomsky (2000). For instance, Adger (2003), a popular textbook, presents the configuration that gives rise to wh-movement as in (34), where a C$_{[Q]}$ head with an unvalued wh-feature probes until it finds a D with a valued matching feature.

(41)   C$_{[Q]}$ (uWh)… …D(wh)
        |_____|

The assumption that a wh-phrase is a DP with an extra feature leads to some reasonable expectations. If a wh-determiner has a richer feature composition than a regular indefinite, we should expect that, at least in some languages, the morphosyntax of a wh-noun phrase should exhibit more structural complexity than that of a regular indefinite noun phrase. In fact, the popular approaches to syntactic theory encapsulated in the labels *Nanosyntax* and *Cartography* would lead to the conclusion that the internal syntax of a wh-determiner should always be more complex than that of a regular indefinite determiner. (For an introduction and development on Nanosyntax, see Baunaz et al 2018, for an introduction to Cartography, see Shlonsky 2010.) Finally, one should conclude that this complexity should be apparent to the naked eye at least occasionally - in other words, we expect the internal complexity of the wh-determiner to spell-out visibly sometimes.

But, as we know, the crosslinguistic evidence presented by Haspelmath (1997) shows that wh-phrases are small, often smaller than any other indefinite. In many languages an indefinite determiner is built on top of a wh-determiner (see the Russian examples above) but you never see a wh-determiner built on top of an indefinite determiner. This suggests that wh-phrases are less feature-rich than other noun phrases. And this leads me to propose that the kinds of analyses of wh-dependencies that involve a richer feature structure for wh-determiners than other determiners should be abandoned.

Instead, I suggest that we adopt the simplest assumption: a wh-phrase is a small indefinite without an additional wh feature. The syntactic dependency with C$_{[Q]}$ is a simple quantifer-variable dependency in which the existential quantifier is merged with the C$_{[Q]}$ (Reinhart 1997):

(42)   ∃C$_{[Q]}$ … NP(x)
        |_____|

The impossibility of having a wh-interrogative bound by an AoQG follows from these assumptions. If the AoQG binds the indefinite, the existential quantifier in C$_{[Q]}$ cannot do so. And vice-versa, binding by ∃C$_{[Q]}$ precludes binding by the AoQG:

(43)   ∃C[Q] … AoQ … NP(x)
        |_____\\ |_____|

        As for the acceptability of the LF in (36b) for (36a), it follows because the wh-phrase is not interrogative and therefore not bound by an existential quantifier in C. The mainstream syntactic assumption that wh-dependencies involve formal features, as represented in (41), does not provide an account for the unacceptability of binding by AoQG in (37)-(39).
        It is commonly assumed that wh-determiners are a sub-set of indefinite determiners. In fact, since they head a small structure, they seem to be a sub-set of 'a NP' rather than 'some NP' Thus, I suggest viewing 'a' and 'wh' as allomorphs of Number bearing the same count value. Notice that the complement of 'which' must always be a count noun phrase, in fact coercing mass nouns into a count reading of type ('which water' means 'which type/instance of water'), just like indefinite determiners like English 'a' or Spanish *un-* do. In fact, it is inherent to the meaning of the wh-phrase that it divides a set of options into distinct members or sub-sets. The difference between 'a' and 'which' is simply the syntactic position:

(44)   Number[PL]   ←→ Ø
        Number   ←→ wh / when in Spec,C
        Number   ←→ a

        Conclusion: only small indefinite noun phrases can be bound by AoQG. This includes wh-phrases, which are small indefinite noun phrases and can be bound by an AoQG. However, a wh-phrase bound by an interrogative C cannot also be bound by an AoQG because this binding violates the Full Interpretation condition that a variable cannot be bound by two quantifiers.

4. A paradox of choice functions

The conclusion that 'some' indefinites cannot be bound by AoQ gives us an indirect argument to take a stake on the debate regarding the exceptional scope of indefinites.
        Farkas (1981) and Fodor and Sag (1982) uncovered a puzzling property of indefinite noun phrases: They can apparently take exceptional scope, even outside syntactic islands. The example sentence (45a) can have a Logical Form like (45b). Notice that both 'a' indefinites and 'some' indefinites can have exceptional scope:

(45)   a.   If Bert invites a/some philosopher, Lud will throw a temper
                tantrum.
        b.   ∃x philosopher(x) & [invite (B, x) → temper(L)]

        That is, (45) can mean that there is a philosopher who has the property of triggering a temper tantrum in Lud if Bert invites him. The canonical theory of quantifier scope claims a correlation between configuration and scope, such that if

x has scope over y, x c-commands y.[5] Inverse scopes are derived using May's (1985) Quantifier Raising (QR). But if QR is a regular syntactic operation, we should not expect it to apply across islands. How is (45b) then derived?

A popular approach to exceptional scope is based on choice functions (see Reinhart 1997 and Winter 1997 for the seminal papers). The idea here is that an indefinite noun phrase denotes a choice function variable of type <<et>e>. This variable takes an NP as a complement yielding a DP of type <e>. This variable is bound by an existential quantifier that can be merged with the structure at an arbitrary distant point, even beyond islands (in Kratzer 1998 the variable is bound contextually). Within this view, the Logical Form for the exceptional scope of (45a) would be as in (46):

(46)   ∃f & [invite (B, f(philosopher) → temper(L)]

The choice function approach retains the idea that indefinite noun phrases are variables of one kind or another – both 'some' indefinites and 'a' indefinites. However, this would predict that both 'some' and 'a' indefinites should be bound by AoQG. But this expectation is frustrated: 'some' indefinites are not bound by AoQG. It seems that 'some' indefinites have a paradoxical property: they can be bound from outside the clause by an existential quantifier but cannot be bound inside the clause by AoQG. This is where we are now: 'a' indefinites are variables and that is why they can be bound by AoQG. 'some' indefinites are QNPs and that is why they cannot be bound by AoQG. But if that is the case, where do exceptional scopes come from?

Here is a second empirical problem for the choice function approach to exceptional scope. Binding by AoQG is constrained by classic locality boundaries. This can be seen in the contrast between the (47) examples and the (48) examples. (47a) is an example of an AoQG binding an 'a' indefinite. (47b) shows the same phenomenon but here the AoQG is 'sometimes', which I take to be an existential quantifier:

(47)   a.   A bad student usually cheats in the exam.
        b.   A bad student sometimes cheats in the exam.

In (48), the AoQ are in the superordinate clause and the indefinites are in the subordinate clause. The binding readings disappear:

(48)   a.   The principal usually finds out if a student cheated in the exam.
        b.   The principal sometimes finds out if a student cheated in the exam.

The examples in (43) particularly contrast with (36), in which the wh-indefinite is in Spec,C and binding by the AoQ is possible. This leads to the conclusion that binding of an indefinite by an AoQ is subject to syntactic

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5   As an anonymous reviewer points out, the notion that c-command determines scope has recently been questioned in Barker (2012). However, this issue is orthogonal to my argument. Whatever configurational notion ends up being the one that defines scope can be incorporated into the main text.

cyclicity. The wh-phrase in (36) is sitting in the edge of the CP, where it is accessible to a higher probe. The indefinites in (48) are inside the CP and therefore inaccessible. But if this conclusion holds, then the idea that an existential quantifier can bind an arbitrarily distant choice-function variable seems to lose its force.

Schwarzschild (2002) proposes an alternative theory of exceptional scope, the so-called *Singleton Indefinite* theory. He argues that indefinite noun phrases are quantifiers like any others to the extent that they include a contextual restriction in their LF, a variable that can be bound by a referent in the Discourse Model. Thus, the LF of 'every child ate some cake' in (49) includes the contextual restriction "at Pepito's birthday party" on the universal quantifier:

(49)   [Yesterday there was a birthday party at Pepito's home.]
        a.   Every child ate some cake
        b.   ∀x [child(x) & at P's birthday party(x)] ∃y cake(y) & ate (x,y)

Additionally, Schwarzschild argues that what makes indefinite noun phrases different is that this contextual restriction may be limited to a singleton set. As a singleton, its scope is neutralized and one may get the illusion of wide scope.

Following Alonso-Ovalle and Menéndez-Benito (2010) I take it that the contextual restriction acts as a function *f* that selects a subset of the set denoted by the noun. In this sense, the contextual restriction works like a subsective adjective such as 'bad' in 'bad pianist'.

(50) $[| f [\text{pianist}] |] = [| f |] (\{x : x \text{ a pianist}\})$

Since the Singleton Indefinites theory does not involve long distance binding of 'some' indefinites, it does not encounter the paradoxical status of the free-choice function analysis. Thus, it seems that this should provide indirect but clear empirical evidence in favor of the Singleton Indefinites approach to exceptional scope.

Before I close this section, I need to clarify one thing. Both 'some' and 'a' indefinites give rise to exceptional scope and I claim that only the former seem to include a quantifier in their syntactic structure. It is usually taken for granted that the contextual variable is associated with the quantifier. If that were the case, then 'a' indefinites would often (or always) not have a contextual variable, an absurd conclusion. Thus, I assume instead that contextual restriction is a property associated with the NP (or NumberP), and not the quantifier.[6] This is in fact the position argued by Stanley and Szabó (2000). Consider the following example:

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[6]   An anonymous reviewer asks if this contextual variable is a property of all nouns. I would say that is most likely the case, since the contextual variable locates the noun in some space-time coordinates. For instance, in (49), the contextual variable for 'child' must be bound by a discourse referent that identifies 'child' as 'child that was at Pepito's birthday party'. For more on this topic, see Stanley and Szabó (2000).

(51)   I didn't buy the house because a window was broken.

(Lyons 1999: 264, Ihsane 2008: 32)

This datum has been presented to argue that 'a' indefinites can have a partitive meaning. But this partitive constituent can only be implicit because 'a' indefinites are incompatible with an overt partitive - 'a window of the house' is not grammatical. Alternatively, we can consider that the NP of a 'a NP' carries a contextual variable, like any other NP. In example (51), the contextual variable associated with 'window' is bound by 'the house', giving the impression of partitivity.

5. Semantic solutions

This article argues that those indefinite noun phrases that are not bound by AoQG have the common property of being big, which leads me to propose that they are in fact QNPs. Thus, it is a syntactic proposal. One could try and suggest a more semantic approach, positing that all indefinites are variables and deriving the impossibility of binding on a semantic property of the unbindable indefinites – this is in fact proposed for English 'some' by Becker (1999) and Farkas (2002). However, the comparative perspective taken in this paper suggests that the unifying approach is unlikely to succeed because we cannot pinpoint what the semantic property would be that would unify all of the binding-resistant indefinites.

A coarse paraphrase of Farkas' proposal could go like this: A variable could find itself in two types of quantification structure. In a quantification structure of the type (52)

(52) $Q(x)(w)$ [Restrictor$(x)(w)$] Nuclear scope$(x)(w)$

all the x variables are coindexed. This would correspond to an AoQG or negation structure in which the indefinite is in the scope of negation. Instead, in a structure of the type (53)

(53) $Q(x)(w)$ [Restrictor$(x)(w)$] $\exists(y)(w)$ & $P(x)(y)(w)$

the variables x and y are not coindexed. Farkas argues that the variable introduced by 'some' has the additional property that it cannot be coindexed with all the variables introduced by the quantifier; that is, 'some' cannot be found in the structure (52). This entails that 'some' cannot be bound by AoQG or sentential negation. On the other hand, 'some' can be valued under intensional predicates because they involve valuing the variable in a world different from the world of discourse.

Notice that a main feature of Farkas' approach is that the 'some' indefinites cannot be in the scope of negation as well as not being bound by AoQG. This is indeed the case for 'some' indefinites. However, my crosslinguistic approach provides some empirical counterexamples to Farkas' proposal. The correlation that she assumes such that indefinites that cannot be

bound by AoQG cannot be bound by negation does not hold in Spanish and Russian. Spanish *algún-* can be found in the scope of negation:

(54)   ¿No hay aquí algún hombre capaz de enfrentarse al jefe?
         NEG have here *algun* man able of confront the boss
         'Isn't there a man here able to confront the boss?'

Likewise, Russian *-libo* can be found in the scope of negation:

(55)   bez kakoj-libo pomošči.
         'Without any help.''

(Haspelmath 1997: 274)

Moreover, it seems to me that we have identified a correlation between the size of the indefinite and the acceptability of AoQG binding, as revealed by Russian and Spanish. There does not seem to be an account of this in Farkas' approach.

Becker (1999) also faces empirical difficulties in a cross-linguistic context. She notes that 'some' cannot be bound by AoQG. She claims, however, that the crucial semantic property is *epistemic nonspecificity*: in 'some NPs' the precise identity of the NP is not known to the speaker or is deemed irrelevant by the speaker. According to Becker, epistemic non-specificity can be tested using the tag 'or other':

(56)   Some student or other walked into the office.

(57) * A student or other walked into the office.

Epistemic (non)specificity is an accidental property of the noun phrase; this property clashes with a generic meaning, which denotes a permanent quality. This is the reason why 'some' indefinites cannot be bound by AoQG.

The observation that 'some NP' is epistemically non-specific is interesting (see also Haspelmath 1997: 47). However, I doubt this property may account for the cross-linguistic data presented here. Consider Spanish *un-* and *algun-*. We can follow Becker's lead and take the tag 'or other' to highlight the epistemic nonspecific meaning, as in 'some cat or other'. As shown in (58) and (59) *algún* does not accept the tag 'or other' while *un* does:

(58)   Chris está saliendo con un actor u otro.
         'Chris is going out with *un* actor or other.'

(59) * Chris está saliendo con algún actor u otro.
         'Chris is going out with *algún* actor u otro.'

This suggests that *un-* can be epistemic non-specific just like 'some' – but this does not prevent it from being bound by AoQG. (*algún* can also be epistemic non-specific, its rejection of 'or other' is probably due to its "at least two" meaning, that I describe below.) In any case, it does not seem to me that the

property of being epistemically non-specific makes binding by AoQG impossible. I think the unacceptability of (57) is unrelated to a semantic notion and rather it is due to a different property of the tag 'or other'. Let's take the PP 'of unknown identity' as an alternative test to highlight the property of epistemic non-specificity, as shown in (60). In (61) I have constructed an example with the same PP with an 'a' indefinite bound by AoQ and it sounds perfectly acceptable. Thus, it looks like an epistemic non-specific indefinite can be bound by AoQG.

(60)   A pianist of unknown identity walked into the store.

(61)   A pianist of unknown identity usually plays too fast.

It looks like the unacceptability of (57) hinges on the tag 'or other', which requires a prosodic contrast: 'SOME student or OTHER'. Since 'a' rejects word stress, it cannot be used in conjunction with 'or other'.

Additionally, both Becker (1999) and Farkas (2002) reject the idea that 'some NP' can be a QNP and subscribe that it necessarily must be a variable. Farkas points out that if 'some NP' were a true QNP it would have an unusual high scope, a scope that could not be accounted for via QR (and she dismisses the choice-function approach on grounds of insufficient empirical support). However, Schwarzschild's Singleton Indefinites idea explains how one can get the impression of broad scope without forcing QR to make impossible acrobatics. Becker (1999) points out that an indefinite can be coreferent with a pronoun in a subsequent sentence, as shown in (62). This would be very unusual for a QNP, as shown in (63). However, the Singleton Indefinite's analysis avoids this problem because a Singleton Indefinite is ultimately interpreted as an individual and as such it can take part in coreference relations in discourse, as in (64):

(62)   Some man called. He wanted to talk to you.

(63) * Every man called. He wanted to talk to you.

(64)   Mary called. She wanted to talk to you.

For the sake of argument, let's see if we can still find a common semantic property to all the binding-resistant indefinites discussed in this paper. I start with Spanish *algun-*, with the help of Alonso-Valle and Menéndez-Benito (2010). They argue that *algun-* is a domain widener: it tells us that the domain of quantification for the indefinite should include at least two individuals. It is therefore different from free choice indefinites; the latter tell us that all individuals in the domain could satisfy the predicate and therefore there is no restriction on the domain of quantification.

To explain the semantics of *algun-* I use and adapt one of the examples in Alonso-Ovalle and Menéndez-Benito (2010). Suppose we are in the terminal station of a train line waiting for Chris. The train line consists of stations 1, 2, 3 and 4, plus the terminal. If we say (65), it means that, for all we know, Chris could be in either 1, 2, 3, or 4. (66) could be uttered even if we knew for certain that Chris cannot be in stations 1 or 2. It is sufficient that 3 and 4 remain options

to pronounce (66). However, if we know for sure that Chris could not be in 1, 2, 3 and only 4 is possible, then we would not be able to utter (66) felicitously. Instead, only *un-* would be acceptable (67):

(65)   Chris podría estar en cualquier estación.
        'Chris could be in any station.'

(66)   Chris podría estar en alguna estación.
        'Chris could be in *alguna* station.'

(67)   Chris podría estar en una estación.
        'Chris could be in *una* station.'

        This limited domain widening is an intriguing property of Spanish *algun-*. However, it is not a property shared with 'some' or the Russian indefinites and therefore cannot be the property that leads to binding rejection in all three languages.
        Let's move now onto the Russian indefinites. As I mentioned above, they have a number of uses, some of which overlap. I summarize Haspelmath's (1997) and Geist's (2008) discussions as follows:

(68)   *-to*   specific unknown
                       irrealis
                       question
                       conditional
        -nibud'   irrealis
                       question
                       conditional
        -libo   irrealis
                       question
                       conditional
                       indirect negation
                       comparative

        As Haspelmath shows, the suffixes are not exactly interchangeable in those uses that overlap since they bring about different pragmatic associations concerning register. However, the property that *-to, nibud'* and *-libo* share is that they can all be used in irrealis, question and conditional contexts. The question now is whether these are the core uses that connect 'some', *algun-,* and the Russian indefinites so that a semantic property can be distilled after all. My conclusion is pessimistic because indefinites that can be bound by AoQG can also appear with these uses. I exemplify this with Spanish examples:

(69)   *Irrealis*
        María quiere algún/un escritorio en esta oficina.
        'Maria wants *algún/un* desk in this office.'

(70)   *Interrogative*
       ¿Tienes un/algún escritorio en esta oficina?
       'Do you have *un/algún* desk in this office?'

(71)   *Conditional*
       Si tienes un/algún escritorio, llama a este número.
       'If you have *un/algún* desk, call this number.'

It does not seem to me that what separates the bindable indefinites from the resistant ones can be easily described in semantic terms.

To sum up it is not clear that we can pin point a single semantic property that would account for some indefinite noun phrases' resistance to being bound by AoQG. However, there is robust evidence that bigger structures do not allow for this binding. I suggest pursuing this syntactic approach.[7]

6. Indefinites as predicates

I would like to finish this article with an additional empirical advantage that derives from the analysis proposed here. All the indefinites that I have presented here as small indefinites can appear as the predicate in a copulative construction or in a small clause. None of the big indefinites are allowed in these positions. This follows if small indefinites are indeed predicates while big indefinites are QNPs. I start with the Spanish examples: *un NP* can be the complement of a copula or the predicate of a small clause, as shown in (72a) and (73a) while *algun- NP* cannot be, as shown in the (b) examples.

(72)   a.   Juan es un buen maestro.
               Juan is *un* good teacher
       b.   *   Juan es algún buen maestro
               Juan is *algún* good teacher

(73)   a.   Considero a   Juan un buen maestro.
               Consider.1 ACC   Juan *un* good teacher
       b.   *   Considero a   Juan algún buen maestro
               Consider.1 ACC   Juan *algún* buen maestro

In English, we can see that 'a NP' can be a complement of the copula but 'some NP' cannot be.

Additionally, 'a NP' can be the predicate of a small clause complement while 'some NP' cannot be:

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7   I have not discussed free-choice indefinites and negative quantifiers in the article, but it seems to me that the consensus opinion is that they are QNPs – for free choice indefinites see Farkas (2006) and for negative quantifiers see Tubau (2020), among many other references. Both free choice indefinites and negative quantifiers reject binding by AoQG, further confirming the hypotheses laid out in this article.

(74)   a.   John is a good teacher
       b. *   John is some good teacher.

(75)   a.   I consider John a good teacher.
       b. *   I consider John some good teacher.

The following Russian examples show that copular sentences and small clauses can be built on bare nouns but not on nouns that have an indefinite determiner:

(76)   a.   John khorosh-y uchitel'
               John good-NOM teacher
               'John is a good teacher.'
       b. *   John kak-oj-to/nibud'/libo   khorosh-y uchitel'.
               John which-NOM-*to/nibud'/libo*   good-NOM teacher

(77)   a.   Ya schita-ju John-a   khorosh-im   uchitel-em.
               I   consider-1 John-ACC   good-INST   teacher-INST
               'I consider John a good teacher.'
       b. *   Ya schita-ju John-a   kak-im-to/nibud'/libo   khorosh-im   uchitel.
               I   consider-1 John-ACC   which-INST-*to/nibud'/libo* good-INST   teacher

The generalization seems to be that only small indefinites can be used as predicates.[8,9]

I take it for granted that copular sentences like (26) and (28) are simple predicates of type $\lambda P \lambda x [P(x)]$. The denotation of 'good teacher' is λx [good teacher (x)] and 'John' can saturate the lambda predicate. Likewise, I take it that the small clause complement of consider is also a predicate. Consequently, the reason why 'some' indefinites cannot be found in these types of sentences is because 'some' indefinites are not predicates but QNPs. Consequently, 'John' has no predicate to saturate and the result is uninterpretable.[10]

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[8]   Numerals are also available in this position, but other forms of weak indefinites are not:
       (i)   John and Mary are two good teachers.
       (ii)   *John, Mary and Chris are several/many good teachers.
[9]   An anonymous reviewer asks what kind of syntax a copulative or a small clause has. One approach that I am sympathetic to adopts the notion that a functional head Pred(ication) selects the NP/NumP and introduces an argument, as in Bowers (1993) and Baker (2003):
       (i)   [PrP John Pr [NumP a good teacher]]
[10]   For space reasons, I gloss over examples such as (i), in which 'some' seems as if it is a predicate after all (similar examples can be constructed with the Russian indefinite *kakojto*.) The comparison with (ii) suggests that in (i) the true head of the structure and complement of the copula is 'teacher'. 'kind' is a (semi)-functional category modified by 'some' (see Alexiadou, Haegeman and Stavrou 2007 for an extensive, panoramic discussion of N-of-N structures.)
       (i)   John is some kind of (a) teacher.
       (ii)   John is a teacher of some kind.

Conclusion

Since Heim (1982), Kamp (1981) and their descendants it has been assumed that indefinite noun phrases are variables. I have presented cross-linguistic data that shows that only a sub-set of indefinite noun phrases can be bound by AoQG and therefore only a subset of indefinites are indeed variables. I have shown that the sub-set of indefinites that have the property of being bound by AoQG also have the property of being small and I have concluded from this datum that only small indefinites are variables and therefore that bigger indefinites include an existential quantifier. I have used these conclusions as a springboard to revisit the syntactic analyses of wh-dependencies and argue that we should avoid positing [wh] features in the syntax. I have shown that the results of this article highlight an inconsistency in the theory of choice functions, thus providing indirect evidence in favor of the Singleton Indefinite approach to exceptional scope. Finally, I have shown that only small indefinites can function as predicates, providing final evidence in favor of the current approach.

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